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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,975	09/16/2003	Jonathan J. Lynch	B-4545NP 620672-7	2675

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EXAMINER

NGUYEN, HOANG V

ART UNIT PAPER NUMBER

2821

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,975

Applicant(s)

LYNCH ET AL.

Examiner

Hoang V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-19 and 25 is/are rejected.
- 7) ☒ Claim(s) 7-11 and 20-24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/24/03 & 4/19/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 12-19 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Sievenpiper et al (USP 6,426,722).

Regarding claim 1, Sievenpiper '722 (Figures 8a-8c) discloses an antenna structure comprising a high impedance surface, the high impedance surface having a conductive plane 10 and an array of conductive elements 12 spaced from the conductive plane by a distance which is no greater 25% of a wavelength of an operating frequency of the antenna structure (col 1, lines 50-51), the conductive plane having an opening (not numbered) therein; and an antenna driving element (feed) disposed adjacent the opening in the conductive plane, which driving element, in operation, excites the antenna structure by pumping RF energy through the opening in the conductive plane.

Regarding claim 2, as applied to claim 1, Figure 8b of Sievenpiper '722 shows that the conductive plane and the array of conductive elements 12 are disposed on opposite side of a insulating substrate (not numbered).

Regarding claim 3, as applied to claim 2, Figure 3b of Sievenpiper '722 shows that each of the elements in the array is coupled to the conductive plane 14 by a conductive via 13 arranged through the insulating substrate 11.

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Regarding claims 4-6, as applied to claim 3, Figure 8a of Sievenpiper '722 shows that each conductive element in the array of conductive elements is in the shape of a square and wherein the square conductive elements are arranged with a common pitch in the array.

Regarding claim 12, as applied to claim 1, Sievenpiper '722 (col 1, lines 50-51) teaches that the array of conductive elements is spaced from the conductive plane by a distance which is no greater than 10% of a wavelength of an operating frequency of the antenna structure.

Regarding claims 13-19 and 25, the antenna structure of Sievenpiper '722 would enable the method of making a low profile, wide band gap antenna comprising the steps as claimed.

Allowable Subject Matter

3. Claims 7-11 and 20-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 7 and 20, Sievenpiper '722 fails to specifically teach an antenna or a method of making thereof, among other features, wherein the opening in the conductive plane is rectangular, having a breadth which is about 0.5 of a wavelength to one wavelength of the operating frequency of the antenna structure and a width which is no greater than the common pitch of the conductive elements in the array.

Claims 8-11 would have been found allowable for depending on claim 7.

Claims 21-24 would have been found allowable for depending on claim 20.

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Correspondence

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hvn
11/8/04



**HOANG V. NGUYEN
PRIMARY EXAMINER**